

The Insect Fauna of Ieie (*Freycinetia arborea*) in Hawaii

BY O. H. SWEZEY

(Presented at the meeting of July 11, 1935)

The ieie vine is common in the forests of all the main islands of the Hawaiian group. In places it forms impenetrable tangles both in the absence of trees and also when climbing amongst trees, as is well known by those entomologists who have taken part in insect collecting in the Hawaiian forests. This native plant seems not to be troubled much with insects, but there are a few which are especially attached to it, and others are associated with it in one way or another.

A large number of insects are associated with *Freycinetia arborea* on account of the way the leaves hold water at their bases, and certain scavenger insects find an appropriate habitat amongst a continuously wet mass of accumulated debris. Some insects have their habitat here in order to prey upon other insects. Then, too, some of the insects collected on ieie may have been in temporary hiding, rather than any other particular purpose.

On page 203 of Proc. Haw. Ent. Soc., VI, 1925, I listed 5 species of insects which are attached to *Freycinetia arborea*. A few more could now be added to that list. This paper is an annotated list of what is at present known of the insect fauna of this plant in Hawaii.

LEPIDOPTERA

Catamempsis decipiens Walsm.

The caterpillars of this gelechiid moth feed in the tips of branches, eating the leaves of the unexpanded spindle. There may be a dozen or more feeding somewhat gregariously, and they produce a filthy condition in which such scavenger insects as nitidulid beetles may be found. They do not eat the terminal bud, however, so the growth of the branch continues, but is unsightly from the ragged appearance of the leaves when they have expanded after the caterpillars have finished their eating. The fullgrown caterpillar is about 25 mm., and the moth has a spread of about 40 mm.

It is pale brown with a few black markings on forewing. It is seldom seen, but the caterpillars are often found, and the evidence of their work is commonly seen when one has become acquainted with the appearance of the injured leaves. It is known on Oahu, Molokai, and Hawaii. It probably occurs on the other islands as well.

Euperissus cristatus Butl.

The larvae of this diplosarid moth feed in the pith of dead ieie stems. The fullgrown larva is whitish, elongate, reaching a length of 50 mm. The larva apparently takes a considerable length of time to reach full growth, and eats for several inches, even to a foot or more in the dead stem. Many of them are killed by a fungus disease. Pupation takes place within the stem after a hole has been gnawed in an appropriate place for the exit of the moth when matured. The moth has an expanse of 35 mm. The forewings are pale gray with three black dots in the disk. This moth is known on Oahu, Molokai and Hawaii, and probably occurs on the other islands as well, or wherever the plant occurs.

HOMOPTERA

Pseudococcus montana Ehrhorn.

This mealybug was described from *Freycinetia arborea* in Palolo Valley, Oahu. It has also been recorded from the same plant in the Panaewa forest south of Hilo, Hawaii. Doubtless it occurs wherever the plant occurs. It has also been recorded on *Astelia veratroides* on Mt. Olympus, Oahu. A parasite, *Anagyrus nigricornis* Timb., has been reared from this mealybug. It is not specific, however, as it has been reared from a few other mealybugs also.

Nesodryas freycinetiae Kirk.

This delphacid was discovered and described from material of all stages collected on ieie on Pacific Heights ridge and Mt. Tantalus, Oahu. It has also been collected on Kahauiki ridge, Oahu, but as yet in no other region.

Ilburnia halia (Kirk.).

This delphacid was described from material collected on ieie on Mt. Tantalus and Pacific Heights ridge, Oahu. It has also been

collected from the same plant on Mt. Olympus and at Kaluanui, Oahu. On Mt. Olympus an egg parasite, *Polynema ciliata* Perkins, was reared from the eggs of this leafhopper.

***Ilburnia anceps* (Muir).**

This delphacid occurs on ieie on the island of Hawaii, having been collected at Glenwood.

***Ilburnia* sp.**

An undetermined species has been collected on ieie on Molokai.

HETEROPTERA

***Metrarga contracta* Blackburn.**

This myodochid bug is occasionally found hiding among the leaf bases. It is probably predacious.

***Sulamita lunalilo* Kirk.**

This mirid bug has been taken abundantly on ieie in Kona, Hawaii. Another mirid has been collected on ieie on Mt. Olympus, Oahu.

***Reduviolus procellaris* Kirk.**

This predacious bug has been collected on ieie on Molokai.

ODONATA

***Megalagrion amaurodytum waianaeaeum* (Perkins).**

***Megalagrion asteliae* (Perkins).**

***Megalagrion koelense* (Blackburn).**

Dr. F. X. Williams has found the nymphs of these damselflies living amongst the leaf bases of ieie. The former in the Waianae Mts., Oahu, and the two latter in the Koolau Mts., Oahu. He has made a detailed study of the nymphs and reared them to maturity. They fed upon the various small insects and other small animals which were living in the same situation. No doubt some of the species of *Megalagrion* occurring on the other islands are also associated with ieie in a similar manner. A mymarid parasite (**Anagrus* sp.) has been reared from one or more species of *Megalagrion* at various places on Oahu.

* *Anagrus insularis* Dozier (See page 175 of this issue).

COLEOPTERA

Metromenus palmae Blkb.

This carabid is common among leaf bases of ieie on Oahu.

Atelothrus platynoides Sharp.

This carabid was collected on ieie on Molokai.

Several other species of carabids are found similarly where they prey on other insects occurring in the same situation.

One or more species of Staphylinidae have been collected from among the leaf bases of ieie where they are predators.

Nesopetinus discedens (Sharp).**Nesopetinus parallelus** (Blkb.).**Eupetinus omalioides** (Sharp).

Dr. Perkins recorded these species of Nitidulidae from leaf bases of ieie on Mt. Tantalus, Oahu.

Orthostolus germanus (Sharp).**Eupetinus impressus** (Sharp).

These two nitidulids were collected on ieie on Molokai.

No doubt several other species of nitidulids may be found in the same habitat when more thoroughly studied. They are scavengers.

Rhyncogonus koebelei Perkins.

Dr. Williams collected this otiorhynchine beetle on one occasion, hiding among ieie leaf bases on the top of Mt. Olympus, Oahu.

Rhyncogonus segnis Perkins.

On one occasion, collected on ieie at Wahiawa, Oahu, by D. B. Kuhns.

Rhyncogonus freycinetiae Perkins.

This species was collected on different occasions at Helemano, Oahu, on ieie by Dr. Perkins and D. B. Kuhns.

Cis laeticulus Sharp.

Dr. Perkins collected this cioid beetle frequently on dead fallen leaves of ieie. It occurs on Oahu, Molokai, Lanai, Maui and Hawaii.

HYMENOPTERA

Besides the mymarid parasites mentioned above (*Polynema ciliata* and *Anagrus* sp.) Dr. Williams has recorded the nesting of *Odynerus oahuensis* D. T. in a dead stem of ieie.

ISOPTERA

Neotermes connexus Snyder.

This termite has been found in dead stems of ieie on Oahu and Molokai.

ORTHOPTERA

Chelisoches morio (Fab.).

Euboriellia annulipes (Lucas).

These and probably other earwigs are sometimes met with as predators on the insect inhabitants at leaf bases of ieie.

Allacta similis (Sauss.).

This roach is found on ieie as well as on most every kind of plant in the Hawaiian forests.

DIPTERA

Dr. Williams has found larvae of the following Diptera in the wet debris at bases of leaves of ieie, as scavengers :

Forcipomyia ingrami Carter.

Reared from larvae in ieie on Mt. Kaala, 1935. This small fly has also been reared from other situations.

Drosophila sp.

Reared from maggots from fruiting top of ieie on Konahuanui, October, 1935. Several specimens of an undetermined figitid were reared from puparia of this fly.

Psychoda sp.

Reared from the same material as the above.

Undetermined species of Chironomidae, Limnobiidae and Dolichopodidae were reared from similar situations at various places.

COLLEMBOLA

Unidentified species are found in the debris at leaf bases of ieie. Probably there are several species.

MISCELLANEOUS

Besides all of the insects mentioned, common inhabitants of the habitat among the moist debris at the leaf bases of ieie are several spiders, oribatid mites, sowbugs, the shrimp *Orchestia pickeringii* Dana, small millipeds and centipedes, earthworms and several kinds of snails.

Fruit-eating and Seed-eating Insects in Hawaii

BY O. H. SWEZEY

(Presented at the meeting of May 2, 1935)

In studies of the insect faunas of the various Hawaiian trees and plants, one finds nearly all kinds of fruits and seeds eaten by one or more special kinds of insects. This paper segregates observations on these habits so far as at present known, mostly the observations of the writer during the 30 years in which he has been interested in the Hawaiian insect fauna. Included also are immigrant insects which feed on fruits and seeds, whether of native plants or of introduced plants as well. The list is arranged by systematic orders of insects, the Lepidoptera including by far the largest number of species.

LEPIDOPTERA

Noctuidae

Chloridea obsoleta (Fab.). The caterpillars feed chiefly in the ears of green corn, scarcely an ear of recent years but what is affected by them. Others hosts are cotton bolls, tomato, *Malva* fruits, *Sida* buds and blossoms, *Malvastrum*, the flower heads of several Compositae as African daisy, marigold, *Ageratum*, *Siegesbeckia*, *Heterotheca grandiflora*, also the flowers of snapdragon, *Gossypium tomentosum* and *Euxolus*.

Phycitidae

Ephestia cautella Walker. The larvae feed in various grains and grain products.